CLAIMS

1. A wireless communications system for communicating data between high density subscriber equipment and an external network, the system comprising:
a base station connectable to said external network;
a distribution network coupled to the base station;
and a plurality of antennas coupled to the distribution network, each antenna providing a wireless connection for one or more proximate subscriber equipment to the distribution network;
wherein said data is communicated between the base station and subscriber equipment by modulating a radio frequency carrier signal.

2. A system as claimed in claim 1 wherein each said wireless connection is a wireless local area network (WLAN).

3. A system as claimed in claim 1 wherein said data is communicated by modulating multiple radio frequency carrier signals, only one of said signals being used in each WLAN.

4. A system as claimed in claim 3 wherein a common modulated radio frequency carrier signal is used in the distribution network and a said WLAN to communicate said data between a said subscriber equipment and the base station.

5. A system as claimed in claim 3 wherein a said radio frequency carrier signal for a said WLAN is frequency multiplexed onto the distribution network.

6. A system as claimed in claim 4, wherein antennas providing WLANs having common carrier frequencies are spaced apart to minimise co-frequency interference.

7. A system as claimed in claim 6 wherein antennas providing WLANs having common carrier frequencies are physically separated by at least one antenna providing a wireless link having a different carrier frequency.

8. A system as claimed in claim 2 wherein the distribution network is a predetermined radio frequency signal pathway between the base station and the antennas for the modulated radio frequency carrier signal.

9. A system as claimed in claim 8 wherein the signal pathway is a coaxial cable.

10. A method of operating a wireless communications system for communicating data between high density subscriber equipment and an external network, the system comprising a distribution network coupled to a plurality of antennas; the method comprising:

communicating data between the subscriber equipment and the external network by modulating a radio frequency carrier signal to provide a wireless connection between a said antenna and one or more proximate subscriber equipment.

11. A method as claimed in claim 10 wherein the distribution network provides a radio frequency signal pathway for the modulated radio frequency carrier signal.

12. A wireless communications system for connecting high density subscriber equipment to an external network, the system comprising:

a base station coupled to a plurality of wireless networks by a distribution network, each wireless network connectable to a number of said subscriber equipment;

wherein the base station communicates with the wireless networks using modulated radio frequency carrier signals.

13. A system as claimed in claim 12 wherein the same modulated radio frequency signal is used in the distribution network and within a said wireless network to couple a said subscriber equipment to the base station.

14. A coaxial cable distribution system for connecting to a plurality of antennas, the system comprising a coaxial cable having a number of coaxial stubs tapped-off therefrom, each tapped-off coaxial stub having means for frequency selectively connecting a said antenna to said system.

15. A system as claimed in claim 14, wherein said frequency selective means comprises a band pass filter.

16. A system as claimed in claim 15, further comprising a number of impedance matching transformers incorporated adjacent said tap-offs and arranged to change the impedance of the coaxial cable in order to optimise power transfer between the coaxial cable and each coaxial stub.

17. A method for connecting to a plurality of antennas comprising:

providing a coaxial cable distribution system having a coaxial cable with a number of coaxial stubs tapped-off therefrom, wherein each tapped-off coaxial stub has means for frequency selectively connecting to one of the antennas.

18. An impedance matching transformer for a coaxial cable comprising means for changing the diameter of the outer conductor on said cable in order to change the impedance of said cable.

19. A transformer as claimed in claim 19 wherein said means comprises a clamp arranged about said cable and operated to reduce the diameter of said outer conductor.

20. A transformer as claimed in claim 18 wherein said means comprises two clamps arranged about said cable and operated to stretch a section of cable between said clamps.

21. A method of implementing an impedance matching transformer in a coaxial cable, the method comprising changing the diameter of the outer conductor of said cable in order to change the impedance of said cable.

22. A coaxial cable tap-off point for connecting a first coaxial cable to an end of a second coaxial cable, the arrangement comprising:

a groundplane extending longitudinally about the outer conductor of said first cable and electrically connected at its distal ends to said outer conductor, said outer

conductor having two longitudinally spaced apart circumferential discontinuities located between said connections which expose the inner conductor of said cable;

an antenna element extending longitudinally about said discontinuities, said inner conductor being located between the antenna element and the groundplane;

wherein said groundplane is connectable to the outer conductor of said second coaxial cable, and the antenna element is connectable the inner conductor of said second cable.

23. An arrangement as claimed in claim 22 wherein said groundplane is a cylindrical collar arranged coaxially about said first cable and wherein said antenna element is located within said collar.